

**METHOD AND SYSTEM FOR CONVERTING CARBONACEOUS  
FEEDSTOCKS INTO ENERGY WITHOUT GREENHOUSE GAS EMISSIONS**

**ABSTRACT OF THE DISCLOSURE**

5           The process and system of the invention converts carbonaceous feedstock  
such as coal, hydrocarbon oil, natural gas, petroleum coke, oil shale, carbonaceous-  
containing waste oil, carbonaceous-containing medical waste, carbonaceous-containing  
hazardous waste, carbonaceous-containing medical waste, and mixtures thereof into  
electrical energy without the production of unwanted greenhouse emissions. The process  
10 and system uses a combination of a gasifier, e.g., a kiln, operating in the exit range of at  
least 700° to about 1600°C (1300-2900°F) to convert the carbonaceous feedstock and a  
greenhouse gas stream into a synthesis gas comprising mostly carbon monoxide and  
hydrogen without the need for expensive catalysts and or high pressure operations. One  
portion of the synthesis gas from the gasifier becomes electrochemically oxidized in an  
15 electricity-producing fuel cell into an exit gas comprising carbon dioxide and water. The  
latter is recycled back to the gasifier after a portion of water is condensed out. The  
second portion of the synthesis gas from the gasifier is converted into useful hydrocarbon  
products.